

### **REMARKS**

In view of the foregoing amendments and the following remarks, Applicants respectfully request reexamination of the present application. No claims have been amended, no claims have been cancelled and no new claims have been added. Claims 143-153 and 168-172 remain pending.

### **CLAIM REJECTIONS – 35 USC §103**

The Examiner has rejected Claims 143, 170 and 171 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,673,092 by Dietz. The Examiner states that Dietz discloses forming a paste including particles 2 to 3 microns in size and comprising 17.6% Pd, along with various dielectric oxides including titanium oxide, and a liquid organic vehicle. With regard to Claim 143, as amended, the Examiner states that nothing in Dietz would indicate the presence of any substantial amount of alkaline earth metals in the particles.

The Examiner admits that Dietz does not disclose the crystallite size recited in instant Claim 143 or the oxidation resistance value (under thermogravimetric analysis or any other method) recited in instant Claims 143 and 171. The Examiner also states that these differences are not seen as resulting in a patentable distinction between the prior art and the claimed invention because:

a) With respect to crystallite size, the Dietz method does not limit the crystallite size and would include processes performed using particles having the presently claimed crystallite size and thus, this aspect of the claimed invention is held to be within the purview of the process disclosed by Dietz.

b) The oxidation resistance of a material would be largely determined by the composition and physical structure of that material. Because these parameters may be the same in either the prior art or the claimed process, no patentable distinction is seen in this aspect of the invention.

The Examiner states that a *prima facie* case of obviousness is established between the disclosure of Dietz and the presently claimed invention.

The Examiner also states that Applicants' previous arguments are not persuasive of patentability because:

a) Applicant has not shown that any particular difference in oxidation resistance exists in the claimed invention versus that of the prior art, i.e., no probative evidence has been presented of any numerical or qualitative differences in oxidation resistance between the two.

b) Even if one looks to [U.S. Patent No. 5,402,305 by Asada et al.] for a teaching of oxidation resistance, it is noted that the Tables of Asada disclose specific examples having oxidation resistance levels within the presently claimed range.

Applicants respectfully traverse this rejection. Applicants maintain that independent Claim 143, upon which Claims 170 and 171 depend, is clearly patentable over Dietz. The unique structure of the particles, including the recited average crystallite size of larger than about 50 nanometers, advantageously increases the oxidation resistance of the particles to a very high level, as is recited by Claim 143.

It is clear that palladium particles are known to oxidize at relatively modest temperatures. This is discussed in the present application and is also supported by the disclosure of Asada et al. As is disclosed by Asada et al.:

Pd powder begins to oxidize and expand at about 500°C which is lower than the sintering temperature of ordinary ceramics . . . In particular, fine Pd powder has a high oxidation activity and oxidizes *almost completely* to cause an increase in its weight by about 15%. (Col. 1, lines 31-38, emphasis added)

The tables of Asada et al. disclose palladium-containing particles having a high oxidation resistance, as is pointed out by the Examiner. However, this is achieved through the addition of alkaline-earth metals to the particles. The particles that did not include alkaline-earth metal additions (e.g., see the comparative examples of Table 1 in Asada et al.) had a *very high* oxidation rate – at least over 86.5% and up to 90.5%. The

present invention can advantageously achieve high levels of oxidation resistance *without* the need for alkaline-earth metals.

Applicants submit that the particles disclosed by Dietz are of the nature described by the comparative examples of Asada et al. and would therefore *also* have a very high oxidation rate. Asada et al. demonstrates that palladium has a high oxidation rate, and there is nothing in Dietz to suggest that the fine palladium-containing particles disclosed therein are any different.

Objective evidence of secondary considerations such as unexpected results . . . are relevant to the issue of obviousness and must be considered in every case in which they are present. When evidence of any of these secondary considerations is submitted, the Examiner must evaluate the evidence. The weight to be accorded to the evidence depends on the individual factual circumstances of each case. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983). The evidence relied upon should establish that the differences in results are in fact unexpected and unobvious and of both statistical and practical significance. *Ex parte Gelles*, 22 USPQ 2d 1318, 1319 (BPAI 1992).

Applicants have demonstrated that the palladium particles of the present invention have a very high oxidation resistance and that the oxidation resistance is not greater than about 40% (see, for example, Table 1 of the present specification). These examples provide evidence of unexpected results when compared to the overall teachings of the prior art, such as Asada et al. and Dietz. The results are of practical significance, as is discussed in the present specification and as is discussed by Asada et al.

In view of the foregoing, reconsideration of Claims 143, 170 and 171 is requested.

### **DOUBLE PATENTING REJECTIONS**

The Examiner has provisionally rejected Claims 143-153 and 168-172 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-18 of copending U.S. Patent Application No. 10/774,791 (now U.S.

Patent No. 7,004,994). The Examiner states that although the conflicting claims are not identical, they are not patentably distinct from each other. The Examiner states that this is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicants enclose a Terminal Disclaimer with respect to U.S. Patent No. 7,004,994. Therefore, removal of this rejection is requested.

Payment of the fee for the Terminal Disclaimer accompanies this response. Applicants do not believe that any additional fees are due with the filing of this Response. However, if any such fees are due, please debit those fees to Deposit Account No. 50-1419.

Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecute and or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

MARSH FISCHMANN & BREYFOGLE LLP

By: /David Dockery Reg. No. 34323/  
David F. Dockery  
Reg. No. 34,323  
3151 South Vaughn Way, Suite 411  
Aurora, Colorado 80014  
Telephone: (303) 338-0997  
Facsimile: (303) 338-1514

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